DRAFT MEETING SUMMARY
Executive Order B-37-16
Long Term Water Use Targets Workshop

September 8, 2016 | Los Angeles, CA

CA Department of Water Resources | State Water Resources Control Board | CA Department of Food and Agriculture | CA Public Utilities Commission | CA Energy Commission

Prepared by the Center for Collaborative Policy (CCP)

Meeting Objectives

- Share detailed overview of Water Targets Framework.
- Provide feedback to Long Term Water use Targets Project Team (Targets PT) on proposed framework.

Workshop Summary

(*Refer to Appendix A for the Water Targets Workshop presentation slides, Appendix B for the Water Use Targets Handout, and Appendix C for the Executive Order B-37-16.*)

Unless noted otherwise, responses are from Targets PT members, which include staff from the Department of Water Resources (DWR) and the State Water Resources Control Board (SWRCB, CA Department of Food and Agriculture (CDFA), California Energy Commission (CEC) and CA Public Utilities Commission (CPUC) (Collectively, the EO State Agencies) and independent consultants.

A. Recurring Themes

- ❖ Participants expressed support for the general framework and understanding for how the new targets were developed. However, they shared concerns regarding detailed aspects of the each standard and what was included.
- ❖ Participants shared diverse perspectives on whether to include recycled water as part of the water budget. Some participants expressed concerns that the target was set on overall water use, and all water is precious. Others felt that there should be incentives to use recycled water.
- ❖ Participants were supportive of using 'irrigable' landscape area as opposed to 'irrigated' area.
- ❖ Participants shared concerns that the State needed to provide more support; types of support varied from State funding to assistance in building local agency self-sustainability.
- ❖ The group generally agreed that Commercial Industrial and Institutional (CII) is very complex. Participants made recommendations for performance measures, suggested the Targets PT review the CII Taskforce recommendations and apply the ones that remain relevant. Additional recommendations were for EO State Agencies to consider an "all of the above" approach.

B. Welcome, Introductions, and Agenda Review

Stephanie Lucero, Center for Collaborative Policy Facilitator, welcomed attendees to the Water Targets Workshop, conducted introductions, and reviewed the meeting objectives.

C. Overview of EO Directive #2

(Refer to presentation slides 3-5, Appendix A)

Mr. Ekdahl, SWRCB, provided an overview of Executive Order (EO) B-37-16 Directive 2. He stated the purpose and goals of this meeting - to discuss standards and targets and to receive feedback and input from suppliers and other interested parties on feasible and achievable approaches. There were no clarifying questions or discussion following this presentation.

D. Overview of Water Budget Targets

(Refer to presentation slides 6-20, Appendix A)

Mr. Brostrom described the reasons for using a water budget approach and explained the proposed water budget calculation methodology for the residential, outdoor irrigation, and CII sectors and for distribution system losses.

Clarifying Questions – Indoor Residential Budget

- Targets PT confirmed that future stages of the regulatory process will address variances for animals located in a residential property zone and weighing more than 100 pounds. Participants expressed concern with animals and swamp coolers being included in the indoor residential budget. Clarifying Questions – Outdoor Irrigation Budget
- Targets PT clarified that landscape area measurement accounts for deck and patio additions. EO agencies are proposing to base the calculation on conditions in the year the parcel was developed, which can be determined by readily available parcel data and county parcel maps.
- Targets PT clarified that the 1993 Landscape Ordinance required a 0.8 plant factor/irrigation efficiency for landscapes existing at the time. This will account for landscapes developed prior to 2010 and unchanged since then.
- Special landscapes are large expanses of grass that have a functional requirement such that they cannot adhere to a water budget. Examples include parks and cemeteries.
- Targets PT confirmed that funds are appropriated for completing the outdoor landscape measurement.

Clarifying Questions – Distribution System Losses

- Participants expressed concern that the methodology shown in the presentation is not necessarily appropriate for every agency. Targets PT confirmed that the presentation shows one possible metric as an example of how to calculate a water volume using a standard. EO Agencies will identify appropriate metrics as they establish a threshold.
- EO Agencies confirmed that they are tracking SB 555 and EO requirements to assure consistency of terminology for standards and thresholds.
- Targets PT confirmed that the calculation for water loss applies to unknown losses not known water loss (e.g., flushing a reservoir, hydrant maintenance).
- Targets PT acknowledged the need to consider variances or adjustments to the calculation to allow for water used during emergency situations such as major fires. However, based on available documentation, the effects of water used during large fires may not have a substantial affect on total water use.
- The Targets PT clarified that Estimates for typical non-revenue uses such as fire-fighting are part of the water audit. The variances mentioned above would apply to extraordinary events that result in a large increase in a supplier's overall water use.

- Targets PT clarified that they are seeking input from stakeholders regarding the inclusion of potable water use only, or recycled water.
- Targets PT clarified that the water use targets pertain to retail suppliers.
- Targets PT clarified that the EO directs EO agencies to identify one approach to compliance (versus the four options provided in SBX7-7). The selected approach will incorporate flexibility to account for diversity of landscapes throughout the State.
- Targets PT clarified that they are working on how target requirements relate to Urban Water Management Plan (UWMP) reporting, including whether agencies will document the 2025 targets in their 2020 UWMPs. Proposals are anticipated for the next UAG meeting.
- Allow agencies to report the target only, and not the individual sector standards. Agencies need adequate time to establish and meet the target. They need to distinguish between accomplishments during the drought and long-term water savings.
- Do not view current water use reductions as a drought emergency response. We need these to achieve water use sustainability. Our historical water use and its effects on pollution and climate change have been unsustainable, inequitable, and immoral.
- Consider a method that uses a five-year historical average. This would allow customers to predict targets.

Clarifying Questions and Comments – Initial Proposed Timeframe

- Participants urged the EO Agencies to think more progressively about 2018 for initial implementation. Perhaps start with a percentage reduction and then work towards achieving targets. Do not lose the momentum achieved during the past two years as a result of emergency regulations and outreach to the public about making conservation a way of life.
- EO Agencies clarified that the January 10, 2017 report is required by the EO by the Agencies. The UAG is informing the report, but it will be prepared by the EO Agencies.
- Participants expressed concern that 2025 is too far off and recommended moving more aggressively.
- Other Participants commented that the proposed schedule is aggressive relative to the availability of irrigated area measurements.

E. Use of Water Budget for Target Setting: SB X7-7 Method 2

(Refer to presentation slides provided in Appendix B)

Ms. Lovsted, Eastern Municipal Water District (EMWD), described EMWD's water budget based SB X7-7 compliance approach.

Clarifying Questions

- Ms. Lovsted confirmed that higher water use in certain areas correlates with land use or other characteristics. These are older areas of the district with retirement communities, single-family homes with more turf and irrigated systems, and more affluent areas.
- Ms. Lovsted confirmed that EMWD does not experience freezing, which could increase agricultural water use significantly. She did provide that most agricultural operations use recycled water.
- She confirmed that the proposed target setting method includes agricultural water use.
- Targets PT are considering an option to exclude agricultural water use.
- Ms. Lovsted confirmed that EMWD's indoor budgets based on persons per household.

- Ms. Lovsted confirmed that three full time staff and two to three temporary staff worked on this effort over a few years. Gathering the necessary information was an extensive effort. The information was also used to respond to customer requests for variances.
- EMWD confirmed that in 2010, they had future landscape area and population estimates. In 2015 they used actual figures to determine compliance.
    - In the 2010 UWMP, population was significantly off prior to the census. That made the biggest difference in the estimated versus actual figures. EMWD assumed growth between 2010 and 2015 that did not occur.
- EMWD clarified the methodology to estimate landscape area:
    - Riverside County parcel information was used.
    - The landscape area for each parcel was calculated based on the parcel size, house footprint (derived by dividing house area by the number of stories), the driveway area (estimated by doubling the garage area), and an estimate of patio size.
    - Individual parcel calculations were made using a GIS system, running these calculations did not take long.
    - EMWD has 140,000 accounts and processed at least 50,000 variances.
- EMWD expressed confidence that the methodology and data is accurate. They verified 90,000 accounts.
- Ms. Lovsted clarified that the difference between landscape area calculations made for pre-2010 accounts and subsequent measurements varied by less than one percent.
- Participants expressed concern that as a larger agency, EMWD has the capacity to conduct this type of analysis. Requiring this approach would significantly change the methods used by smaller and medium size agencies. It would require a rate change subject to Prop 218, new technology, and additional staff.
    - EO Agencies clarified that the proposed target framework will not require water agencies to use allocation-based rates or to set rates based on parcel data. The targets are based on the sum of all four sector standards. The State will provide landscape data to water agencies. This data may require verification.
- EMWD's initial starting point was to verify data for lots over 6000 square feet. EMWD found that water use remained constant as lot sizes decreased below 6,000 square feet. This is unique to EMWD's service area.
- Ms. Lovsted confirmed that EMWD topography varies within the EMWD service area, including flat and hilly areas as well areas with many trees. EMWD used oblique imagery to measure slopes accurately. Ground truthing was conducted for certain locations where necessary.
    - Participants expressed concern that hills and tree canopy can have a dramatic effect on the ability to use infrared technology.
- Ms. Lovsted confirmed that the initial cost of a CIMIS station is about $7,600 for equipment and $850 to install. EMWD spends about two hours per month to maintain each station.

F. Framework for Water Loss Control Actions and Standards

Mr. Gomberg described multi-agency (SWRCB, PUC, and DWR) efforts and resources to reduce leaks. He reviewed SB 555 and its relationship to the EO. The EO agencies are seeking feedback and discussion on:

- How to prioritize funding for water loss over the next few years,
- The PUC technology certification program, and
- Suggestions regarding collection of water loss information (in addition to UWMPs).

Clarifying Questions

- Participants expressed concern that water balances are an iterative process. They recommended waiting for third cycle of water balances to be complete in order to have better data.
- The EO agencies confirmed implementation of the EO will follow an iterative and adaptive approach. At the next UAG meeting, the agencies will present a timeline, with mandatory requirements beginning in 2021, milestones in 2025, and adaptive management beyond 2025. EO Agencies will make a determination at the end of 2019, and will consider waiting if an additional year would better inform the decision making.
- The EO agencies may consider requiring suppliers to conduct a component analysis of cost effective solutions in order to expedite the process before 2021.

Discussion

- Thank you for recognizing that SB 555 is already moving forward, linking the EO process to SB 555, and building on currently available information and data.
- Consider correlating EO implementation timeframes with the timing of current and proposed Water Research Foundation projects related to water loss methods, techniques, and devices.
- SB 555 applies to retail urban water suppliers. Consider data collection among the wholesale industry. Current AWWA methodology performance indicators are not as robust as retail performance indicators. Water Research Foundation projects may identify an opportunity for refinement of the performance indicator tool.
- The component analysis builds on the audit. Having a correct audit at the beginning is critical.
- A component analysis may involve costs (e.g., for additional meters) and may result in water quality issues associated with isolating a portion of the system for a period of time.
- Mr. Gomberg underscored the EO directives' purpose, which is to begin addressing water loss now, rather than waiting until 2020 when water loss standards go into effect.

G. Projected Indoor Water Savings from Plumbing Codes and Fixtures

(Refer to presentation slides 31-42, Appendix A)

Dave Mitchell, M-Cubed presented an analysis of projected water savings associated with existing plumbing codes and standards.

Clarifying Questions

- M-Cubed confirmed that the model and assumptions (saturations, staring points, etc.) will be made public. A technical memorandum documents the analysis. DWR and SWRCB will review the technical memorandum and then will post it online.
- M-Cubed explained that to account for varying saturation levels the model starts at a baseline level with no saturation and simulates forward using a standard replacement rate across counties. The model can be refined to reflect replacement rates for individual counties. M-Cubed has been able to benchmark against statewide saturation estimates and at the State level, the model replicates well. They have not yet benchmarked at the county level.
- M-Cubed confirmed that the model could over estimate in areas that have had direct installations or successful rebate programs depending on the relative impact of those programs.
- M-Cubed confirmed that the model predicts average efficiency in 2015 and uses that as a baseline. Behavior assumptions stem from pre-drought end use studies that did not involve

California households. Therefore a 2015 baseline does not have lower than average conditions because of drought based water use and behavior changes.

- This model estimates the water use reduction that can be anticipated from plumbing codes and appliance standards. It can be used to inform the reduction target for indoor use. It can also inform the rate of transformation and identify a reasonable level of acceleration associated with a policy proposal.
- M-Cubed expressed a desire to receive additional data from water agencies (e.g., saturation studies).

H. Framework for Indoor Residential Standards

(Refer to presentation slides 43-48, Appendix A)

Mr. Ekdahl reviewed the current proposed standard for indoor residential.

Clarifying Questions and Discussion

- The foundation of data in the M-Cubed model is based on end use studies. To address changes between 2016 and 2030, EO agencies plan to conduct several additional end use studies.
- [Irvine Ranch Water District (IRWD)] Clarified that the 55 GPCD used in SB X7-7 Method 2 was based on various end use studies available at the time. This was considered a reasonable target for 2020. It is higher than health and human safety level. This is not a standard for addressing emergency drought situations but drives efficiency.
- Participants expressed concern with starting at the 55 GPCD standard.
    - The EO Agencies reminded participants that the EO requires strengthened existing standards. As such the framework begins with existing standards.
- Participants urged the Targets PT to consider indoor water use needed for medical purposes (e.g., dialysis). RWD shared that they use a 55 GPCD and issue a number of variances for these uses.
- Targets PT clarified that individual agencies should develop a metric to show how special uses in their district increase water use beyond the standard. This will help define which uses warrant a variance.
- Targets PT confirmed that the process for obtaining variances is being considered. They anticipate there may be general types of variances that apply to all suppliers including variances for medical uses.
- Participants expressed concern regarding the effort and resources that would be required by an agency to validate data submitted to support a variance.
    - Targets PT confirmed that data submitted to support a variance will not require parcel level accuracy. For example, in the case of medical devices, a general assessment of the number of devices in the district can be used to determine if these would significantly effect the overall estimated water use.
- Targets PT clarified that they are still reviewing the consequences for an agency that exceeds the State target and will discuss pending proposals at the next UAG meeting. Enforcement is a part of the EO and will be included in the January 10, 2017 report.
- Participants expressed concerns regarding the potential for bug growth with decreased household water flow. Targets PT confirmed that they were unaware of lower flows resulting in issues, such as legionnaire's disease, for most residential uses. This was not identified as an issue in drought reporting from communities with a standard close to 40 GPCD. This issue may occur in facilities that are not actively used and is a concern for building managers. However, the State will continue to monitor this.

- Targets PT confirmed that population and mapping tools to assist with developing population figures are available. The State is open to feedback on issues suppliers have experienced in the UWMP process. EO Agencies recognize that population figures are estimates.
- Targets PT confirmed that the targets are annual. Seasonal variability in monthly reporting will not affect overall target compliance.
- The target will change from year to year due to variations in evapotranspiration factor used in determining the outdoor water use budget. This will adjust targets for wet and dry years?
- Targets PT confirmed that they are still determining whether the target will be based on a water year or fiscal year.
    - Participants recommended fiscal year reporting to conform to billing systems and data.
- Correlate reporting to water loss audits for SB 555, which will either be on a calendar or fiscal year.

I. Framework for Outdoor Landscapes

(Refer to presentation slides 49-57, Appendix A)

Mr. Brostrom reviewed the proposed methodology and standard for calculating outdoor landscape budgets. Questions and challenges requiring further considerations include:

- Should landscape measurements include irrigated or irrigable area?
- Which of the following landscapes should be included in the outdoor budget: residential, dedicated irrigation, CII mixed meters, and/or areas irrigated with recycled water?
- Depending on which sectors are included as part of the landscape budget, suppliers may need to clearly identify how CII landscapes are being irrigated (mixed meters, dedicated irrigation, recycled water, or raw water deliveries).

Clarifying Questions and Comments

- The EO agencies recognize that for many districts a single number will not work. Districts can have a number of zones. As this process proceeds, the EO agencies will aim to achieve a minimum level of accuracy to capture zones at a service area wide level. This will help address variations in the evapotranspiration (ETo) for different sections of a service area.
- Targets PT confirmed that the new technologies to be used in the pilot study can identify both irrigated and irrigable area. The study will include both.
- Targets PT confirmed that native irrigated areas will be included with the irrigated approach. Natural areas within large lots that are not developed or irrigated would not be included.
- The Targets PT confirmed that pools will count as part of the water budget.
- Targets PT confirmed that the State will likely have an accuracy verification process with its vendor. The State is looking at service area-wide accuracy. It is also working with vendors to make parcel level data available to local agencies. Agencies may choose to interact with the vendor to achieve a higher level of accuracy.
- Targets PT confirmed compliance with EO targets will be determined on a service-area wide basis. Parcel specific data will not be necessary.
- The intent of the EO is to make sure that water is being used efficiently and appropriately across the State. Large vegetable gardens, irrigated pastures, and small orchards will be considered special landscape areas.
- Targets PT confirmed that the new remote sensing technologies can account for elevation changes by changing the angle of view.

- Targets PT confirmed that re-measurement of landscape data will be required every several years in order to keep data accurate. How this will be accomplished, including funding, will be determined at a later point in this process.

Comments and Discussion from Participants

Irrigable V. Irrigated Area

- The Targets PT acknowledged participants concerns that aerial photography, depending on the date it was taken, may not accurately reflect the current number of brown lawns. This may be an issue with using irrigated area. The Targets PT is taking the variability of irrigable areas over irrigated area into consideration.
- Participants expressed concern that the use of irrigated or irrigable area would be important for the agricultural component, if included in these targets. Irrigated agricultural area can change in any year or any season.
- Participants recommended the irrigable approach as more prudent because there are a number of residential properties that are in transition to drought tolerant landscapes.
    - Participants recommended inclusion of all irrigable or "landscapable" areas to avoid the variability in irrigated area. Use irrigable area and use an adjustable process to improve the accuracy of this measurement.

Landscapes to Include in the Outdoor Budget

- Most agencies could exclude recycled water without difficulty because there are maps for recycled water permits.
- It is not a problem to include all of the other landscape categories since the target will be an aggregate.
- Taking recycled water out of the equation may not provide the complete picture. Some recycled water is supplemented with potable water in the summer.
- Start by including residential and dedicated irrigation. These are the easiest to identify.
- A number of participants commented on including CII mixed meters is complicated because aerial imagery will identify a landscaped area but a site visit is necessary to determine the type of meter. The inclusion of CII mixed meters can be phased. In doing so, consider agency resources and provide technical assistance to smaller agencies.
- The proposed use of landscape standards that were in place when a property was developed was concerning for agencies that will be held to target based standards they do not have the ability to enforce.
- Include dedicated irrigation areas that deviate substantially from standards, such as cemeteries and parks.
- Continue to include CII mixed meters in the CII sector. Typically CII uses with mixed meters do not include large landscape areas. It is difficult to separate out landscape area. This would require estimating indoor CII use, which is highly variable due to the large variety of CII uses.

CII Landscape Irrigation

- Challenges in identifying how CII landscapes are irrigated include:
    - Landscape meters may not serve an entire property.
    - Meter information requires extensive ground truthing.
    - In areas served by private wells and public water systems, it is difficult to distinguish between uses served by the public water system and by a well.
    - It is difficult to distinguish between on-site recycled water use and irrigated meter use.

- Converting a mixed meter to an irrigation-only meter may not make economic sense for the customer as well as the supplier. It creates complications with regard to billing and creates other costs.

Given these challenges, this cannot be accomplished in the short term, especially by small to very small suppliers.

General Methodology Comments

- Consider using a percentage of the parcel versus the landscape area as of the date the home was built.
- Appreciation was expressed for the State's assistance to water suppliers, taking on the pilot project, and exploring how imagery will be helpful.
- It will be difficult for agencies to gather information for parcels that are served by more than one district and in cases where agencies are intermingled and there is no simple geographic definition.
- Water agencies have a disincentive from a budgeting and regulatory standpoint to implement conservation measures. This presents a challenge to implementing these regulations.
- State water policies have led to devastating water quality impacts, climate change impacts, put communities at risk, and cost billions of dollars, e.g., for desalinization plants. Although agencies would face difficulties in implementing the proposed regulations, do not delay, do not wait until 2025, and do not reverse progress that has been made.
- Keep the emergency regulations in place. There were issues with these regulations, however, from an environmental standpoint, they resulted in many benefits in terms of water conservation, emission reductions, and climate change.
- Be careful about subtracting well water from the overall equation. During dry periods, these customers use more water from water suppliers.

J. Framework for CII Standards

(Refer to presentation slides 58-64, Appendix A)

Mr. Brostrom discussed the difficulty in establishing a CII water budget standard and reviewed potential CII water budget approaches. He requested feedback on the following questions:

- Should CII water use be separated into outdoor and indoor components?
- Is it possible for water suppliers to develop a self-assessed CII water budget standard?
- Can performance measures lead to water savings?
- Are there additional performance measures that should be considered?

Clarifying Questions

- Targets PT affirmed that the State does not intend to cause economic harm. New businesses that involve heavy water use by showing percent reductions from the baseline, new uses would require a variance for economic growth. A variance procedure similar to that developed for SB X7-7 may be considered. Discussion

CII Water Budget Approaches

- A percent reduction approach is preferable in that it gives agencies the flexibility to decide how to achieve the goal. However, this approach is only preferable if waivers for economic growth are provided.

- Using a baseline and applying a percent reduction as a method to set a standard for CII is not consistent with the general approach of the framework. The general approach is to avoid the unfairness and penalties for early adopters associated with the use of baselines.
- If a baseline method is selected, use the SB X7-7 10-year baseline for CII.

Separation of CII into Indoor and Outdoor Components

- The Targets PT confirmed that the framework is not intended to reduce landscaping at commercial uses, but rather to seek water use efficiency by businesses where CII landscaping is a functional part of their business.
- Require separate water meters for landscaping at commercial uses over a certain size. In order to achieve a conservation goal, businesses need to know how much water is being used. Without separate meters, there is no feedback on how much water is wasted.
- Implement efficiency measures rather than prescriptive percentage reduction requirements. There are a few agencies that account for a large portion of CII water use in the State and many agencies that have a small CII use. Arbitrary reductions may not make sense for certain types of CII uses.

Feasibility of Self-Assessed CII Water Budget Standard

- Water agencies are not informed about changes in use at CII facilities. This makes it difficult to measure and track. Therefore, create a supplier self-assessment performance standard.
- Use self-assessments because agencies do not have the technical expertise to show businesses how to save water. Provide greater support from the State, business community, and chambers of commerce.

Performance Measures

- The Targets PT clarified that performance measures will not apply to specific industries. They are actions water agencies would take relative to CII uses, such as water audits. For example, industries over a certain thresholds might be required to evaluate how they use water and if there are cost-effective measures that could be implemented. Agencies will not be required to dictate performance measures for specific CII uses.
- Implement performance standards because water use standards cannot be developed without use classifications.

General Comments

- Include the CII sector in the framework for conservation. Brainstorm strategies and solutions without removing any options. Many business members saw the drought as an opportunity to innovate in terms of technology and drought tolerant landscaping. Engage business and trade associations in this process. Apply lessons learned from the energy sector, including the Environmental Protection Agency (EPA) portfolio management tool.
- Implementing conservation measures for the CII sector is complicated and can be difficult for agencies, particularly smaller ones. However, many opportunities exist for savings within this sector.
- Tie water savings to energy savings. Electric utilities have accomplished conservation; there are measures that result in savings in both energy and water.
- Use an effort-based approach to promote conservation, e.g., audits, rebates, and partnerships. Scale required efforts according to agency size and resources.
- Implementation of conservation measures by CII customers is based on their willingness and the economics of the investment.
- Establish targets for CII and track progress, but do not use those to determine if agencies are in compliance. Use a soft approach.

- Targets should not have a negative impact on the economy.
- Business want to do the right thing. Working with businesses helps to motivate them not only to realize the potential payback of conservation measures but also to take action.
- Water audits have had mixed results because business are looking for a quick pay back. Typical conservation requires too long of a payback period.
- Build off work of CII task force and implement their performance measures and recommendations. As data is collected over time, the methodology can be refined.
- Consider that as we learn more about the elements in each CII sector and break these down into business types, this will have an impact on rate structures.

K. Closing Comments

Mr. Ekdahl thanked attendees for coming to the meeting and for their comments. He also thanked the Metropolitan Water District of Southern California for the use of their facility. Additional comments may be sent to wue@water.co.gov.

The next UAG meetings will occur on September 19 and 20. At these meetings, the EO agencies will have a summary of comments and a revised framework for targets, standards, timeline, and enforcement.

L. Attendees

Full Name	Affiliation
Mario Remillard	Carlsbad MWD
Elizabeth Lovsted	Eastern MWD
Justin Finch	Mesa Water District
Rosemarie Chora	City of Oceanside
Ken Jenkins	Cal Water
Al Shaikh	City of Anaheim
Dana Friehart	SDCWA
Fiona Sanchez	IRWD
Jeff Stephenson	SDCWA
Justin Scott-Coe	Monte Vista Water District
Sue Mosburg	Sweetwater Authority
Eric Grub	CVWD
Kimberly Thorner	OMWD
Greg Thomas	Rincon Water
Kevin Wattien	Central Basin
Mike Obermiller	City of Poway
Joey Randall	OMWD
Bob Tincher	SBVMWD
David Pedersen	LVMWD
Erik Porse	UCLA
Allen Carlisle	Padre Dam MWD
Bruce Reznick	LA Water Keeper
Sofia Marcus	LADWP

Ian Prichard	Camrosa Water District
Lisa Skutecki	Brown and Coldwell
Ethel Young	MWD
Ron Merckling	Casitas MWD
Michael Hadley	Western MWD
Katie Evans	Coachella Valley WD
Peter Dugan	LA DWP
Nina Jazmadasia	Foothill MWD
Henry Grammlich	Calleguas MWD
Sunny Wang	Brown and Caldwell
Janett Robledo	East Valley
Jeron Lam	LADWP
Christopher McKinney	Escondido
Bill Leever	Brown & Caldwell
Lisa Stoia	Helix Water District
Nik Reppuhn	Los Angeles County Department of Public Works
Melinda Weinrich	County of Corona
Bruce Reznick	LA Water Keeper
Sara Aminzadeh	California Coast Keeper Alliance
Nidolo Schidure	MWA
Nik Reppuhn	Los Angeles County Water Districts
Joe Berg*	Municipal Water District of Orange County
Conner Everts*	Environmental Justice Coalition for Water
Penny Falcon*	Los Angeles Department of Water and Power
Stephanie Pincetl*	University of California, Los Angeles
Ron Wolfarth*	Rain Bird Corporation

**UAG Member*

Agency and Consultants

Name	Agency / Organization
Diana Brooks	Department of Water Resources
Peter Brostrom	Department of Water Resources
Erik Ekdahl	State Water Resources Control Board
Max Gomberg	State Water Resources Control Board
Dave Mitchell	M-Cubed
Stephanie Lucero (Facilitator)	Center for Collaborative Policy
Lisa Ballin	Center for Collaborative Policy

The following Agencies/Organizations attended via Webinar:

First Name	Last Name	Organization
Charlotte	Lopez	
Annie	Mezzacappa	
Mohammad	Mostafavi	

Wanda	Moyer	City of Simi Valley/Ventura County Waterworks District No. 8
Bassil	Nahhas	Burbank Water and Power
Monica	Noeng	
Stefanie	Olson	Dublin San Ramon Services District
Gina	Palino	TreePeople
Linda	Palmquist	
Susan	Pan	County of Ventura
Kathleen	Riedel	Fox Canyon Groundwater Management Agency
Chris	Robbins	Vallecitos Water District
Steven	Sabbe	
Piper	Schaar	OmniEarth
Terence	Shia	CPUC
Yvette	Stevenson Rodriguez	Orchard Dale Water District
Shannon	Sweeney	City of Santa Maria
Jenny	Tribo	
Meggan	Valencia	Rancho California Water District
Dean	Wang	LBWD
Madeline	Ward	City of Santa Barbara
Deb	Whitney	USBR
Irene	Yamashita	Mammoth Community Water District
Patrick	Pilz	
J	Pueblos	
Mazhar	Ali	SWRCB
Chris	Brown	
Wendy	Chambers	Carlsbad Municipal Water District
Rosemarie	Chora	City of Oceanside
Teresa	Gomez	City of Oceanside
Jack	Hawks	California Water Association
Heather	Stroud	City of Carlsbad
Greg	Zlotnick	
Sar	Johnson	

M. List of Appendices

- Appendix A – Presentation Slides – DWR, SWRCB, and M-Cubed
- Appendix B – Presentation Slides – Eastern Municipal Water District
- Appendix C – Framework for Setting Water Use Targets Based on Indoor Water Use, Outdoor Water Use, Commercial, Industrial, and Institutional (CII), and Water Loss Standards and Budgets
- Appendix D – Executive Order B-37-16